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BIRDS

ERICKSON STUDY AREA: DUCK BREEDING POPULATIONS AND HABITAT, THEN (1970-72) AND NOW (2008-13).

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INTRODUCTION

Parklands in Manitoba are a dynamic environment characterized by irregularly-occurring wet and dry years which in turn, affect the number of wetlands available to waterfowl.^{1,2,3} Wetlands are critical for waterfowl reproduction and the abundance and degree of permanency of these wetlands is one factor that determines the size of duck breeding populations.^{2,3} During the late 1980's and early 1990's, a dry period existed across southern Manitoba which reduced the number of wetlands available to ducks and consequently, breeding populations declined from highs in the 1970's.³ Heavier precipitation returned in the late 1990's, continuing through the 2000's, filling wetlands in southern Manitoba and in conjunction with enhanced conservation efforts, numbers of most waterfowl species have returned to levels at or above those seen in the early seventies and at or above goals set out by the North American Waterfowl Management Plan.³

In 1986, the North American Waterfowl Management Plan was formulated by the U.S. and Canadian governments to address declining waterfowl populations and to (1) set population goals for those species that breed in the prairie, parkland and boreal areas and (2) promote and fund management practices that enhance waterfowl production.⁴

One species whose continental population has been declining since the 1980's and that did not recover after the mid-continent drought is the lesser scaup (*Aythya affinis*, hereafter scaup).^{3,5} Scaup breed from the Dakotas to Alaska⁶ and the parkland scaup population in southern Manitoba has been intensively studied near Erickson, Manitoba, Canada (50° 30' N, 99° 55'W) since the 1950's.⁷⁻¹² I studied scaup from 1970-72 within this site and have farmed in the area since, allowing me an opportunity to observe and record changes in the area over the past forty-three years. Since this site

has had such a rich waterfowl research history and little current comparative data exist, in 2008, I decided to revisit my study area to record (1) current duck breeding population levels (with primary focus on scaup), and (2) changes to habitat and populations of some other species that might influence duck reproductive parameters. I compared the results to those of forty years previous. Managers need current data on abundance and reproductive performance of species, but also accurate comparative information from the past to formulate conservation policies.

STUDY AREA AND METHODS

My block study area (BSA) is situated ~3.4 km southeast of the town of Erickson and comprises 680 ha of rolling parkland habitat (Fig 1). The area has been well described in previous studies, all of which occurred on or near the BSA.^{10,12,13} To record breeding populations of waterfowl and other species, one or two observers walked a fixed route between 600 and 1300 hrs at ~weekly intervals from early May to late June, 1970-72 and from mid-May to mid-June, 2008-13 (5-6 annual surveys). In 1970, only that part of the BSA including most of the permanent and semi-permanent wetlands (350 ha, ~70% of total wetlands) was surveyed so the actual total

number of breeding ducks are most likely higher than those recorded. However, subsequent observations over the years of those wetlands not observed in 1970 suggest that recorded 1970 diving duck numbers are close to those that would have occurred in the study area. Dabbling duck numbers are biased lower for that year. For dabbling duck species, breeding pairs were recorded following the protocol of Dzubin.¹⁴ For diving duck species, observed pairs plus single males on isolated ponds were added for total pair count. Non-paired diver males tended to congregate on larger lakes and in most cases, single males observed on larger lakes were considered not to represent pairs. For divers, emphasis was placed on surveys conducted during the pre-egg laying and early laying periods to avoid the bias of these non-paired males being counted as representing pairs; I approximated timing of egg laying by backdating embryo age (1970-72) or by backdating from date of earliest brood appearance and by observed pair behaviours (2008-13). However, for the recent study period, Buffleheads (*Bucephala albeola*), a species of diving duck, began laying earlier than the date of first survey and some single males on larger lakes were, depending on behaviour and location, considered to

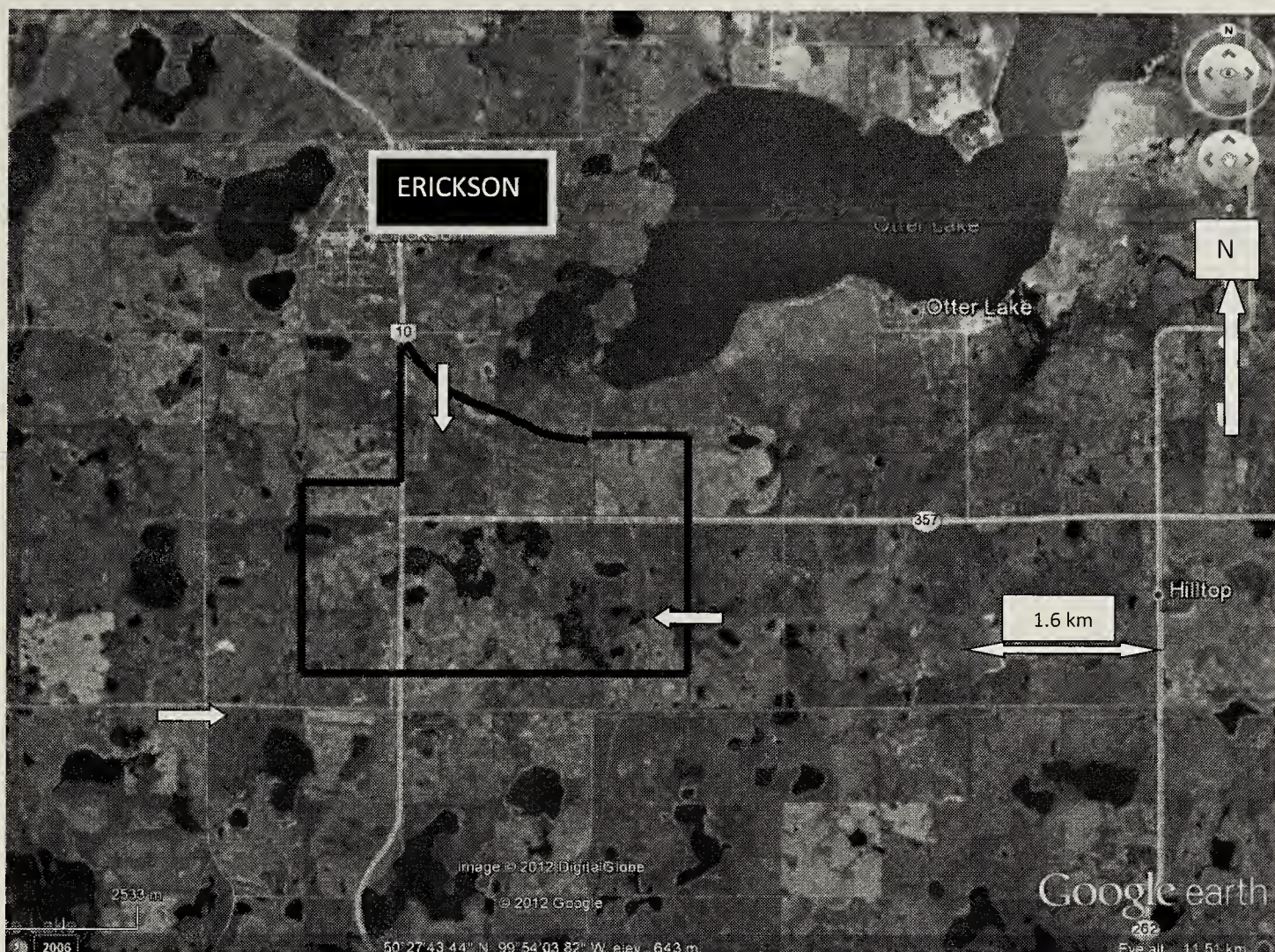


Figure 1. Location of 680 ha Erickson study area in southwestern Manitoba. Heavy line marks boundary. Arrows indicate areas of dense nesting cover on or adjacent to study area. Water conditions are as of May, 2011.

represent pairs. For all species, I averaged the results of surveys conducted during survey periods as described above and by Dzubin¹⁴ and I compared the results between 1970-72 and 2008-13. As sample sizes are small and distribution of variables is unknown, I rank-transformed the values for each species in each period and performed a Wilcoxon rank-sum test via a parametric t-test to determine the significance of each comparison.¹⁵

To document habitat change,

I gathered quantitative and qualitative data on some of those factors that might affect waterfowl production. This analysis was not extensive or in-depth and represents an overview only. To describe wetlands, I used the classification criteria of Stewart and Kantrud.¹⁶ To compare water conditions on the study area between the time periods 1970-72 and 2008-13, I examined aerial photos and Google Planimeter to determine number and size of ponds and upland characteristics (% area cultivated , % haylands,

etc.). Also, I averaged May pond numbers (an indicator of waterfowl habitat quality) from annual waterfowl survey segments (400m x 29km) flown along fixed transect lines near Erickson (stratum 40: transect 6, segments 3 and 4).¹⁷ To gather information on the predator community in recent times, I established ten scent stations located < five meters from water's edge and > 200m apart near nine permanent or semi-permanent ponds.¹⁸ A plastic sheet 1 m in diameter, was covered in seven-ten cm of fine soil that was raked smooth with a comb and lightly watered. One half to one ml of commercial scent (Original Hoffman Lure Making Ingredients: Fish Juice; www.cabelas.ca) was applied to the centre of the smoothed soil prior to each exposure night. Stations were prepared after 1800 hours to reduce surface desiccation and checked for tracks¹⁹ on two successive nights, five times (3 in 2009; 2 in 2010) during a part of the scaup nesting period (26 June-12 Aug). Relative abundances were determined from the number of stations visited by a predator species each night divided by the number of stations. Mean relative abundance was calculated for each species for the entire test period (10 exposure nights) and these means were compared to proportions of depredated lesser

scaup nests attributed to various predators frequenting this wetland zone during 1970-72⁹ (unpubl. data). This comparison does not account for changes in the relative abundance of each predator species over time (data sets for each time period were obtained by different methodology) but provides a "rough" estimate of activity immediately around permanent wetlands during each time period. The nature of the predator community and abundance on drier sites was not assessed for either time period.

RESULTS and DISCUSSION

Wetland and upland conditions

Wetland water levels were high in all study years but higher in the 2000's. Water levels began to retreat in late summer of 2011 and with little spring run-off, continued to decline through 2012. Permanent ponds remained high throughout 2012 because of record flooding in 2010- 2011, but most semi-permanent and all seasonal wetlands were dry by fall, 2012. In 2013, water conditions improved and emergent vegetation flourished. Wetland area increased from 12% in the 1970's to 14% in 2011, the wettest year (Table 1). The average of the May pond numbers recorded on the annual survey for segment 3 and 4, transect 6, was above the

TABLE 1. Comparative description of agricultural and non-agricultural land-use patterns on the 680 ha block study area, Erickson, MB 1970-72 and 2008-13.		
Use (%)	1970-72	2008-13
cultivated	46	39
pasture ^a	14	13
hay	20	24
bush	5	6
wetland	12	14
other ^b	3	4
^a = includes pastured bush		
^b = yard sites, commercial property, railway line, fence lines		

long-term average for all years except 2013. Approximately 12 % of BSA wetlands (n=160 in 1970-'72) were drained, partially drained or filled between 1970 and 2013 (i.e.: 2 small dugouts and 17 seasonal ponds; ~6 ha total); this relatively small loss compares to ~70% wetlands degraded or lost due to drainage (1968-2005) in the Broughton's Creek watershed, an area considered to be representative of southwestern Manitoba land use and wetland loss trends.²⁰

Areas of upland used for agricultural purposes were similar in composition and extent for both periods, but one block of the pastureland (ca 50 ha) and one block of hayland (ca 55 ha) are currently, idle, providing excellent dense nesting cover (Fig. 1). The railway track and right-of-way

that traversed the BSA in the 1970's has since been converted to a walking path (Trans-Canada Trail), providing a ribbon of habitat for plants and animals. Also, a 45 ha block of dense upland cover (Ducks Unlimited Canada) was established during the 1990's adjacent to the southwest corner of the BSA.

Between study periods, a major shift occurred in cereal and oilseed cropping practices in southern Manitoba (and on the BSA) from rotating summerfallow to continuous cropping, employing minimum or no-till methods. Concurrently, a shift in pasture management techniques also occurred involving the increased use of rotational grazing. Pastures were divided by fencing to create more numerous smaller paddocks and cattle were rotated between

TABLE 2. Frequency of predator tracks at ten scent stations (2009-10) and the proportion of depredated scaup nests attributed to various predators (1970-72) near Erickson, Manitoba.		
Species	Tracks ^a	Nests ^b
	0.23	
Racoon	(.05)	0.47
	0.02	
Skunk	(.01)	0.20
	0.05	
Coyote/fox	(.02)	0.13
	0.01	
magpie/Crow/raven	(.01)	0.04
	0.13	
Mink/weasel	(.03)	0.07
	0.01	
Black Bear	(.01)	0
	0.03	
unknown	(.02)	0.09
^a mean (se)		
^b n=45, island nests excluded.		

these paddocks. As a result, pastures are now idle for longer periods of time, vegetation (and ground nesting cover) grows undisturbed between grazing periods, and grazing residue height is taller providing presumably improved habitat for ground nesting bird species and small mammal populations. Small mammals (*Microtus*, *Peromyscus*, *Clethrionomys*, *Poliocitellus spp*) provide an alternative food source for some waterfowl predators and may also depredate waterfowl nests.^{21, 22}

Predator populations

The species, both avian and mammal, that prey on waterfowl nests are numerous and well documented.²² Active and abandoned farmyards are known to be used by predators and might influence the nearby predator community.^{pers. obs.,23,24} These farmyards were present in both periods on the BSA (1970's: 5 abandoned, 7 occupied; 2000's: 4 abandoned, 5 occupied, 1 commercial). Data from scent stations during 2009-10 and proportions of depredated lesser scaup nests attributed to predators during 1970-'72 suggest that the predator community now

around wetland edge is similar (but not the same) in species makeup. Racoons (*Procyon lotor*) predominated in both time periods, being the most frequent scent station visitor and most significant predator of scaup nests, at least in the 1970's period (Table 2). Other predators recorded with less frequency in 1970-72 and 2009-10 were mink (*Neovison vison*), skunk (*Mephitis mephitis*), coyote (*Canis latrans*), fox (*Canis vulpes*), crow (*Corvus brachyrhynchos*), and magpie (*Pica hudsonia*); black bear (*Ursus americana*) was only recorded in 2009. Although these two data sets invite comparison, such a comparison has limited value because the two data sets were obtained with different methodology. I conclude with confidence however, that the racoon, a recently arrived predator in the Erickson area (mid-1960's)²⁵ is still a significant predator around wetland edges.

The number of waterfowl predator species has expanded since 1970's. There is now presence of black bear, fisher (*Martes pennanti*), martin (*M. americana*) and summertime (breeding) ravens (*Corvus corax*) in the area. The effects on the local duck populations of these additional potential waterfowl predator are unknown. Bear

numbers have increased since the early 1970's and sign of their activity on the study area was frequently seen in recent years (pers obs., local outfitters, Table 2). Fisher and martin were reintroduced to Riding Mountain National Park (RMNP), situated ~18 km north of the BSA between 1991 and 1995 and have become widespread (RMNP data) and have been reported in the Erickson area (local residents and trapper obs.). Interestingly, anecdotal local evidence suggests that fishers are significant predators of domestic cats (*Felis catus*) which are known predators of birds, including ducks (pers. obs). Ravens were rare or absent during the summer in the early 1970's but are common now and are known to nest across southwest Manitoba²⁶ (pers.comm. C. Cuthbert, Ducks Unlimited). Ravens are known predators of waterfowl nests.²⁷

Other animal species

Populations of several other species associated with wetlands have increased significantly since the early 1970's. The return of beaver (*Castor canadensis*) and Canada geese (*B. c. maxima*) in the early 1980's was dramatic. The presence of old beaver dams and runs on the landscape around the Erickson area, however, suggests there was a robust population sometime in the past.

Beavers significantly altered most permanent and semi-permanent ponds in the last 30 years and created new impoundments wherever they found running water and a food source. Water levels on these existing and new wetlands were dramatically altered by beavers building dams and people removing them to alleviate flooding. In some instances, these level fluctuations may have been detrimental to floating or pond-edge waterfowl nests. Trees and shrubs surrounding wetlands were flooded and felled by beavers, altering the habitat and making some small willow-dominated (*Salix spp.*) wetlands larger and thus accessible to waterfowl. In fall, 2011-2013, beavers occupied 5-7 wetlands on the BSA.

Canada geese are now abundant breeders in southwestern Manitoba. They were absent, at least around Erickson, in the early 1970's. Large gatherings of Canada goose adults and gosling (e.g.: ~ 100 individuals; 75% goslings in 2008) were recorded on the BSA in most years during 2008-'13. Goose eggs and goslings likely provide an additional food source for some predators. Over the forty years, another obvious change in the avian fauna occurred, that being a large increase in breeding Red-necked grebes

(*Podiceps grisegena*) on the BSA (1970-72: 0-2 birds/year ; 2008-13: 28-34) and in southern Manitoba in general; these grebes were uncommon in the early 1970's.²⁸ In contrast, Horned Grebes (*Podiceps auritus*), which were abundant on the BSA (1970-72: 5-21 birds/year) and elsewhere in the early 1970's,²⁹ have decreased in southwestern Manitoba and there were no breeding pairs in 2010-13 on the BSA (2008-13: 0-2 birds/year). Red-necked grebes are fiercely territorial and can displace waterfowl from territories.^{30, 31}

An additional environmental parameter, the presence of fish in wetlands, may have deleterious effects on food quantity for some waterfowl species (e.g. scaup) either by direct competition or through disturbance to the aquatic environment by their feeding activities.³² At Erickson, fish populations exist in some permanent and semi-permanent wetlands and may affect waterfowl production but there are no local data. Smaller ponds may contain, depending on location, depth, and water conditions, fathead minnow (*Pimephales promelas*), and/or brook stickleback (*Culaea inconstans*). Larger, deeper lakes may contain, in addition to fathead and stickleback, populations of northern pike (*Esox lucius*),

yellow perch (*Perca flavescens*), and white sucker (*Catostomus commersonii*).³³ On the BSA, the type and size of any native fish populations are unknown and may be absent as most of the larger bodies of water are isolated and do not have drains directly connecting them to lakes with permanent fish populations. I have seen no evidence of native fish species in these BSA lakes but they may be there in some years. However, periodically, rainbow trout (*Oncorhynchus mykiss*) have been stocked by local landowners in some of the lakes on and off of the BSA. These introduced fish are released in the spring and netted in the fall. In most cases, reduced oxygen levels during winter prevent trout from surviving. The Federal Department of Fisheries undertook rainbow trout research at Erickson in 1968 to investigate the feasibility of fish farming using local wetlands and a large number of lakes at that time had trout introduced (e.g: 12 lakes in 1970; 30-40 lakes [350,000 fish] in 1972).³³ The research found large-scale fish-farming to be economically unfeasible and the research ended in 1982 but the practice is continued by some landowners at a much reduced level. On the BSA from 1978-2010, trout were stocked in one or two lakes each year; none were stocked in 2011-2013. In

the 373 km² Rural Municipality of Clanwilliam, in which the BSA is located, only 3 lakes contained trout in 2011.³³ Undoubtedly at Erickson, trout and other fish species compete with waterfowl for aquatic invertebrates but the effect is unknown.

Invasive plant species

Two readily noticeable changes to the Erickson area wetland plant community over the last several decades have been the increasing occurrence of reed canary grass (*Phalaris arundinacea*) and hybrid cattail (*Typha x glauca*). Reed canary grass is a robust, sod-forming perennial grass that grows from 50-150 cm tall. It is usually associated with moist soils where it forms dense monotypic, persistent stands. It colonizes readily by root or seed and may exclude or displace other plant species. There were few stands of this grass near Erickson in the early 1970's and I believe that there were none on the BSA. During the 1960's-'80's, some landowners (including the author) sowed the species in and around wet areas for cattle forage but its unpalatability as hay and its aggressive nature means there are few plantings now. The resulting spread of this plant on some farmsteads and the altered vegetative community around wetlands may affect waterfowl.

TABLE 3. Estimated number of breeding pairs of ducks on the 680 ha study area near Erickson, Manitoba, 1970¹-72 and 2008-13.

Species	Year								
	1970	1971	1972	2008	2009	2010	2011	2012	2013
Lesser Scaup*	22	19	23	2	5	4	3	3	3
Ring-necked*	0	0	1	9	22	14	13	13	10
Bufflehead*	1	0	1	12	15	17	16	16	18
Goldeneye	1	1	1	0	0	0	0	1	2
Canvasback	7	4	5	3	1	5	4	3	6
Redhead	2	3	1	8	2	1	4	4	4
Ruddy	4	2	4	7	8	2	2	0	0
Hooded									
Merganser	0	0	0	0	0	0	0	0	0
Mallard	11	15	18	18	16	23	12	23	19
Shoveler*	1	1	2	5	5	4	4	6	7
Gadwall	6	4	1	4	5	4	3	5	3
Blue-winged Teal*	11	13	15	20	20	20	22	26	15
Green-winged									
Teal	2	2	3	1	5	2	3	5	4
Northern Pintail*	3	7	7	0	0	0	0	0	0
American									
Widgeon*	3	5	2	0	1	0	0	0	0
Wood Duck	0	0	0	0	1	0	0	1	0
Total	74	76	84	89	106	96	86	106	91

¹ 350 ha censused in 1970; see Hammell 1973

* denotes significant difference (p<0.05) in pair counts between periods

However, reed canary grass has not been planted in or around the BSA and only a few scattered small patches occur in the area.

Native cattail (*Typha latifolia*) was the only emergent *Typha* species around Erickson in the 1970's. A new species, thought to be predominately the hybrid (*Typha x glauca*) has invaded southwestern Manitoba (J. Wasko, Univ. of Manitoba, pers. comm.). The new species is a hybrid between *T. latifolia* and *T. angustifolia* and has occurred in

the study area within the last 10-15 years. On the BSA, obvious (*Typha x glauca*) patches occur and grow ~ 1 m above the native species. The hybrid can overtake native stands and grows in deeper water (J Wasko) potentially reducing areas of open water, eliminating waterfowl habitat. On the BSA, one permanent wetland has extensive stands (>50%) of the new species, another has a few scattered stands but the other wetlands have no obvious clumps. Generally, across the Erickson area, the degree of

infestation is minimal at present but is increasing; *T. latifolia* still is the predominant or only cattail species in most wetlands.

Duck breeding population change

Total numbers of pairs counted on the BSA during 2008-13 were greater in all years than those counted during 1970-72 (Table 3). Abundance of breeding pairs of some species changed dramatically and consistently between the two study periods. Scaup, formerly the most common species on the BSA^{8,9}, have become one of the least common. Ring-necked duck (*Athya collaris*) and bufflehead have become much more abundant after being uncommon in the early 1970's. Blue-winged teal (*Anas discors*) and northern shoveler (*A. clypeata*) have increased also as they have in other areas.³ Mallard (*A. platyrhynchos*) breeding pair numbers are similar or increased. American widgeon (*A. americana*) and northern pintail (*A. acuta*), which were recorded in the 1970's but whose continental populations have been below long-term average in recent years³ have virtually disappeared from the BSA. Goldeneye (*Bucephala clangula*) were, for most years in both periods, not present. Wood duck (*Aix sponsa*) and hooded merganser (*Lophodytes cucullatus*) pairs and broods

were not recorded during 1970-72 but are more frequent now. The numbers of other duck species including canvasback (*Athya valisineria*), redhead (*A. americana*), ruddy (*Oxyura jamaicensis*), gadwall (*Anas strepera*), and green-winged teal (*A. crecca*), were small and/or variable with no significant trend.

Possible reasons for the decline in continental scaup numbers include changes to food resources in wintering and migration habitats,^{34,35} chemical contaminate exposure,^{6,36-39} climate changes affecting boreal forest wetlands,^{5,40} lower female survival,⁵ and fewer immature birds relative to adults in human harvests (declining age ratio);⁵ however, as yet, no clear explanation for the decline has been determined. Ring-necked and bufflehead ducks, whose populations in southern Manitoba have been low in the past,² have, on the BSA and more widely in the Erickson parkland area, increased dramatically (GH, unpubl. data).⁴¹ The return of the beaver and the subsequent alteration of wetlands occurred concomitantly with these ring-necked and bufflehead breeding population changes. As well, the recent increased sightings of wood duck and hooded merganser pairs and broods in the Erickson area have occurred mainly in wetlands

altered by beavers (pers. obs.). Wood duck, merganser and bufflehead are tree cavity-nesting species and may be responding positively to the presence of beaver ponds, which often provide numerous dead trees around the periphery. Dead trees contain numerous cavities and may be used as nesting sites by these ducks. Only a few (<10) artificial nest boxes for cavity-nesting ducks have been erected in the Erickson area (none on the BSA) and most have not been regularly maintained.

Reasons for the continental decline in American widgeon populations are unclear.⁴² For northern pintails, the landscape scale change from use of summerfallow to continuous cropping has denied females quality nesting sites.⁴³ In the past, stubble fields slated for tillage later in the season (summerfallow) provided good nesting sites for early-nesting pintails. Now, nests in continuously-cropped stubble fields are usually destroyed by the seed drill before they have a chance to hatch.

CONCLUSIONS

In such a dynamic environment as the Manitoba parklands, it is not surprising that both plant and animal populations would experience temporal and spatial change. I do not know if the

degrees and types of change observed on the BSA are the same for all areas of southwestern Manitoba. However, the trends I report are representative of changes in the Erickson area.

The BSA, relative to other areas in southwestern Manitoba, has not suffered extensive habitat degradation. As a result, the total number of breeding ducks on the BSA, 2008-2013, has been maintained or increased over the last 40 years. These results provide evidence that duck numbers can be maintained over time provided that suitable breeding habitat has not been seriously degraded and that environmental factors operating off of the breeding grounds have not negatively affected these populations.

The reappearance of beaver in the early 1980's in the Erickson area has had a major affect on wetlands. For waterfowl, beavers have been beneficial in that they have helped to retain water on the watershed by flooding existing wetlands and by creating new ones. However, landowners use machinery to remove dams and ditches were deepened and wetlands were lost. Accordingly, the net result for waterfowl of the return of the beaver in the local area is uncertain.

Unfortunately, unregulated draining of wetlands is an ongoing reality across much of southern Manitoba and was especially prevalent during the dry falls of 2011 and 2012. Wetlands provide many societal benefits, including wildlife habitat, downstream flood protection, improvements to water quality and carbon sequestration.^{20, 44, 45} To realize these societal benefits, wetlands must be retained through programs that encourage land owners to hold water in the upper watershed. Presently, much of the BSA still provides these benefits and it was a rewarding experience to walk the paths that I took 43 years ago and still see wetlands and wildlife in abundance.

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1. Woo MK (1992) Impacts of climate variability and change on Canadian wetlands. *Canadian Water Resources Journal* 17(1):63-69.
2. Trauger DL, Stoudt JH (1978) Trends in waterfowl populations and habitats on study areas in Canadian parklands. *Transactions North American Wildlife and Natural Resources Conference* 43:187-205.
3. Fish and Wildlife Service (2013) Waterfowl population status, 2013. U.S. Department of the Interior, Washington, DC USA.
4. What is NAWMP? www.nawmp.ca/eng/part2_e.html

5. Afton AD, Anderson MG (2001) Declining scaup populations: a retrospective analysis of long-term population and harvest survey data. *Journal of Wildlife Management* 65:781-796.
6. Austin JE, Custer CM, Afton AD (1998) Lesser scaup (*Aythya affinis*). In A. A. Pool and F. Gill, editors. The Birds of North America, Number 338. The American Ornithologists Union, Washington, C. 32pp.
7. Kiel WH (1949) Waterfowl productivity in the Newdale-Erickson District of Manitoba. Pp. 76-81 in Waterfowl populations and breeding conditions – summer 1949. United States Fish and Wildlife Service Special Scientific Report Wildlife No 2. Washington, DC.
8. Rogers JP (1964) Effect of drought on reproduction of the Lesser Scaup. *Journal of Wildlife Management* 28:213-222.
9. Hammell GS (1973) The ecology of the lesser scaup (*Aythya affinis* Eyton) in southwestern Manitoba. M.S. Thesis, Univ. Guelph, Ont. 156pp.
10. Afton AD (1984) Influence of age and time on reproductive performance of female lesser scaup. *Auk* 101:255-265.
11. Austin JE, Fredrickson LH (1987) Body and organ mass and body composition of postbreeding lesser scaup. *Auk* 104:694-699.
12. Koons DN, Rotella JJ (2003b) Have lesser scaup, *Aythya affinis*, reproductive rates declined in parkland Manitoba? *Canadian Field Naturalist* 117(4):582-588.
13. Sunde LA, Barica J (1975) Geography and lake morphometry of the aquatic study area in the Erickson-Elphinstone district of southwestern Manitoba. Winnipeg, Manitoba. Environment Canada Fisheries Marine Service Technical Report No. 510.
14. Dzubin A (1969) Assessing breeding populations of ducks by ground counts. Pages 178-230 in Saskatoon Wetlands Seminar. Canadian Wildlife Service Report Series Number 6.
15. McDonald JH (2009) Handbook of Biological Statistics (2nd ed.). Sparky House Publishing Baltimore, Maryland.
16. Stewart RE, Kantrud HA (1971) Classification of natural ponds and lakes in the glaciated prairie region. U.S. Fish and Wildlife Service Resource Publication 92, Washington, DC, USA.

17. United States Fish and Wildlife Service. Waterfowl Breeding Populations and Habitat Survey Segment Count Data. http://mbdcapps.fws.gov/mbdc/databases/mas/dispr_segcnt.asp
18. Roughton RD, Sweeney MW (1982) Refinements in scent station methodology for assessing trends in carnivore populations. *Journal of Wildlife Management* 46:217-229.
19. Murie, OJ (1974) A field guide to animal tracks. (Peterson Field Guide Series 9)
20. Ducks Unlimited Canada. www.ducks.ca/.../projects/broughtons/pdf/broughtons-factsheet.pdf
21. Brook RW, Pasitschniak-Arts M, Howerter DW, Messier F (2008) Influence of rodent abundance on nesting success of prairie waterfowl. *Canadian Journal of Zoology* 86:497-50.
22. Sargeant AB, Savoda MA, Greenwood RJ (1998) Interpreting evidence of depredation of duck nests in the prairie pothole region. United States Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, ND and Ducks Unlimited, Inc., Memphis, TN. 72pp.
23. Fritzell EK (1978) Habitat use by prairie raccoons during the waterfowl breeding season. *Journal of Wildlife Management* 42:118-127.
24. Lariviere S, Messier F (1998) Denning ecology of the striped skunk in the Canadian Prairies: Implications for waterfowl nest predation. *Journal of Applied Ecology*.35(2):207-213.
25. Hammell GS (2011) Lesser scaup and raccoons: are there links in southwestern Manitoba? *Blue Jay* 69(2):54-69.
26. Carey B et al. (2006) Finding birds in southern Manitoba. Manitoba and Brandon Naturalists Societies, Co-publishers.
27. Fournier MA, Hines JE (2001) Breeding ecology of sympatric greater and lesser scaup (*Aythya marila* and *A. affinis*) in the subarctic Northwest Territories. *Arctic* 54(4): 444-456.
28. Trends from the Breeding Bird Survey in Canada: Red-necked Grebe. Migratory Birds Conservation Monitoring and Reporting. Canadian Wildlife Service, Environment Canada, Ottawa.www.cwssc.fec.gc.ca/mgbc/trends/index.cfm?lang=e&go=info.birdSummaryProvince&provid=5&speciesid=6110 <http://>

29. Ferguson RS, Sealy SG (1983) Breeding ecology of the horned grebe (*Podiceps auritus*) in southwestern Manitoba. *Canadian Field Naturalist* 97(4): 401-408.
30. Garner LA (1991) Intra- and interspecific aggression by red-necked grebes. Ms thesis, North Dakota State University, Fargo, ND.
31. Stout BE, Nuechterlein GL (1991) Red-necked Grebe (*Podiceps grisegena*). In The Birds of North America, No.465 (A Poole, F Gill, eds) The Birds of North America, Inc. Philadelphia, PA.
32. Anteau MJ, Afton AD, Anteau ACE, Moser EB (2011) Fish and land use influence *Gammarus lacustris* and *Hyalella azteca* (Amphipoda) densities in large wetlands across the upper Midwest. *Hydrobiologia* 664:69-80.
33. Personnel communication, G. Curry, J. Whitaker, former Federal Department of Fisheries personnel.
34. Anteau MJ, Afton AD (2008) Diets of lesser scaup during spring migration throughout the Upper-Midwest are consistent with the spring condition hypothesis. *Waterbirds* 31:97-106.
35. Anteau MJ, Afton AD (2009) Lipid reserves of lesser scaup migrating across a large landscape are consistent with the "spring condition" hypothesis. *Auk* 126:873-883.
36. Custer CM, Custer TW, Anteau MJ, Afton AD, Wooton DE (2003) Trace elements in lesser Scaup (*Aythya affinis*) from the Mississippi flyway. *Ecotoxicology* 12: 47-54.
37. Anteau MJ, Afton AD, Custer CM, Custer TW (2007) Relationships of cadmium, mercury, and selenium with nutrient reserves of female lesser scaup (*Aythya affinis*) during winter and spring migration. *Environmental Toxicology and Chemistry* 26: 515-520.
38. DeVink J-M, Clark RG, Slattery SM, Scheuhammer TM (2008a) Effects of dietary selenium on reproduction and body mass of captive lesser scaup. *Environmental Toxicology and Chemistry* 27: 471-477.
39. DeVink J-M, Clark RG, Slattery SM, Wayland M (2008b) Is selenium affecting body condition and reproduction in boreal breeding scaup, scoters, and ring-necked ducks? *Environmental Pollution* 152:116-122.

40. Drever MC, Clark RG, Derksen C, Slattery SM, Toose P, Nudds TD (2012) Population vulnerability to climate change linked to timing of breeding in boreal ducks. *Global Change Biology* 18(2):480-492.

41. Koons DN, Rotella JJ (2003a) Comparative nesting success of sympatric lesser scaup and ring-necked ducks. *Journal of Field Ornithology* 74:222-229.

42. Howerter D (2007) North Carolina study tracts birds in Manitoba. The Flyway Newsletter, Ducks Unlimited Canada. Vol: 28(4).

43. Ducks Unlimited Canada. www.ducks.ca/conservation/programs/pintail/pdf/pinfacts.pdf

44. Yang WX, Liu WY, Gabor S, Boychuk L, Badiou P (2010) Simulated environmental effects of wetland restoration scenarios in a typical Canadian prairie watershed. *Wetlands Ecology and Management* 18(3):269-279.

45. Blackwell MSA, Pilgrim ES (2011) Ecosystem services delivered by small-scale wetlands. *Hydrological Sciences Journal* 56(8):1467-1484.



Northern shovellers

- Anne Brigham

INTERNATIONAL EFFORTS TO UNRAVEL MYSTERIES OF MOVEMENT PATTERNS OF SNOWY OWLS

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As an Arctic top predator, the Snowy Owl (*Bubo scandiacus*) is an enigmatic and iconic bird, catching the imagination and attention of both ornithologists and non-birders alike. In North America, snowy owls breed in Arctic tundra above the treeline but their movements during autumn and fall have long been a mystery. We now know that some individuals remain in the high Arctic all winter,^{1,2} while other owls travel south and overwinter in such places as the Canadian prairies, or along the eastern coast of the US.³ Densities of snowy owls wintering in the south show great annual variation⁴ with periodic irruptions. For example, the

marked irruptions of snowy owls the last two winters (2011/2012 and 2012/2013) across North America, made headline news in TV and newspapers. Breeding primarily in the high Arctic tundra, it is a hard bird to study on the breeding grounds in the high Arctic all year.

However, around the globe there are a few enthusiastic scientists who are trying to unravel the biology and migration patterns of snowy owls. To improve the quality of data collected and to speed up efforts, an *International Snowy Owl Working Group* (ISOWG) was formed during the fourth *International World*

Owl Conference in The Netherlands in November 2007. The aim was to bring together the people who study this elusive bird, and to establish a network for cooperation and the exchange of information, ideas and research results.

Three years later, the ISOWG came together during its first workshop in Saskatoon in February 2010. This gathering was hosted by the late Dr. Gary Bortolotti at the University of Saskatchewan, with participants from Canada, USA, Russia, Germany, Switzerland and Norway. During the workshop's field trip to the southern part of Saskatchewan more than 20 wintering snowy owls were sighted, of which two were caught and banded.

At the end of the workshop, the Saskatchewan and Norwegian participants joined forces to start a cooperative study. Banders in Saskatchewan had been trapping and observing wintering snowy owls since 2000, and have handled more than 450 snowy owls. These experienced banders had plenty of wintering snowy owls, but no funds for satellite transmitters which

allow for continuous tracking of birds over distances that span continents. On the other hand, the Norwegian group had a snowy owl satellite tracking project running since 2005 and funds for transmitters, but few snowy owls in the field. The Norwegians agreed to provide transmitters for use in Saskatchewan, and sent two transmitters to Canada after the workshop. We chose to focus primarily on catching male birds, since most of the other satellite tagged snowy owls in the Arctic have been females. In March and April 2010, the transmitters were placed on two male snowy owls which later flew north along the western side of Hudson Bay up to the Gulf of Boothia, before heading south again in fall 2010. One of the males was found dead in Saskatchewan, and the transmitter retrieved and recycled on another male. During late spring 2011, the two males flew north following a more western route, crossing the northern taiga forest belt. They ended up on Victoria Island, where they both stayed during summer. In autumn, during migration southwards, the oldest working transmitter

steadily gave positions from an area S-SW of Hudson Bay, indicating that the male either had died there or lost the transmitter.

We had two more transmitters available in autumn 2011, and two new males were tagged in late December but one owl did not survive the winter and died shortly before spring migration. In spring 2012 there were therefore two males with transmitters, and both flew north following the same route as the two males did the previous summer. Both owls also stayed on Victoria Island during the summer, heading towards southern Saskatchewan in late autumn, but those transmitters went silent during the winter of 2012-2013.

We thus had winter and summer areas and migration routes of four males before the winter of 2012-13, when eight more transmitters became available. In late February 2013, three of the Norwegians were able to go to Saskatchewan once again, to join up for a week of intensive fieldwork. Five of the transmitters had already been deployed by the Canadian crew, and two

more owls were marked during the Norwegians' visit. Shortly after, the last transmitter was put on the eighth male this winter. Two of the males were caught and marked in Alberta by Mike Blom, and one male was marked by Erhardt Pletz near Edmonton, Alberta.

Since the batteries of the transmitters should last for 4-5 years, we hope to follow these males for several more years, in order to understand how, and why, owls choose certain breeding and wintering grounds and migration routes. Two of the transmitters attached in winter/spring (2013) are solar-powered with GPS positioning devices, giving more accurate locations that also can be used for studies on habitat/territory use on both the breeding and wintering grounds. In May 2013, all eight males flew north to the Arctic, ending up from Southampton Island north of Hudson Bay, to Banks and Victoria Islands. In December 2013, at least six of these males were back in the same areas where they were banded. We are curious to see if some of these males later will choose to stay all winter in the high Arctic, as found in females

marked on Bylot Island in 2007,² and in both males and females marked as breeding birds in northern Norway the same year. (Solheim unpubl. data)^{5, 6}

By using molt patterns in the birds' wings, snowy owls can be aged at least up to and including the winter after their third wing feather molt.⁷ This method gives us an opportunity to age young birds with precision up to the age immediately before their fifth summer. Five of the males marked during February-March 2013 could be aged as younger birds. These owls are probably the most valuable because they may reveal whether snowy owls change migration strategies as they age, and whether they are philopatric to the same wintering grounds they initially chose as young birds.

1. Fuller MR, Holt D, Schueck LS (2003) Snowy owl movements: Variation on the migration theme. Pp 359-366, in P. Berthold, E. Gwinner, and E. Sonnenschein (eds.). Avian migration. Springer,

Heidelberg.

2. Therrien J-F, Gauthier G, Bêty J (2011) An avian terrestrial predator of the Arctic relies on the marine ecosystem during winter. *Journal of Avian Biology*. 42: 363-369.
3. Smith N (2002) The snowy owl satellite telemetry project. *Bird Observer* 30 (2): 88-94.
4. Kerlinger P, Lein MR, Sevcik BJ (1985) Distribution and population fluctuations of wintering Snowy Owls (*Nyctea scandiaca*) in North America. *Canadian Journal of Zoology* 63:1829–1834.
5. Solheim R, Jacobsen K-O, Øien IJ (2008) Snøuglenes vandringer. Ett år, tre ugler og ny kunnskap. *Vår Fuglefauna* 31:102-109. (in Norwegian)
6. Jacobsen K-O, Solheim R, Øien IJ, Aarvak T (2009) Snøuglenes vandringer fortsetter. *Vår Fuglefauna* 32:172-176. (in Norwegian)
7. Solheim R (2012) Wing feather moult and age determination of Snowy Owls *Bubo scandiacus*. *Ornis Norvegica* 35: 48-67.



Photo 1 - The Canadian-Norwegian Snowy owl team with a male snowy owl ready for release. From left: Karl-Otto Jacobsen, Roar Solheim, Marten Stoffel (with owl), Karen Wiebe, Dan Zazelenchuk and Ingar Jostein Oien. Tomas Aarvak did not participate during the field work in March 2013.

-Roar Solheim



Photo 2 - Satellite transmitter is mounted as a backpack. Dan Zazelenchuk is making the last adjustments while Marten Stoffel holds the male snowy owl. Karen Wiebe watches the process.

-Roar Solheim



Photo 3 - Male owl takes off with the transmitter on its back. This “old” male flew to Southhampton Island where it stayed during summer 2013, and returned in December to the region where it was caught on March 2.

-Roar Solheim

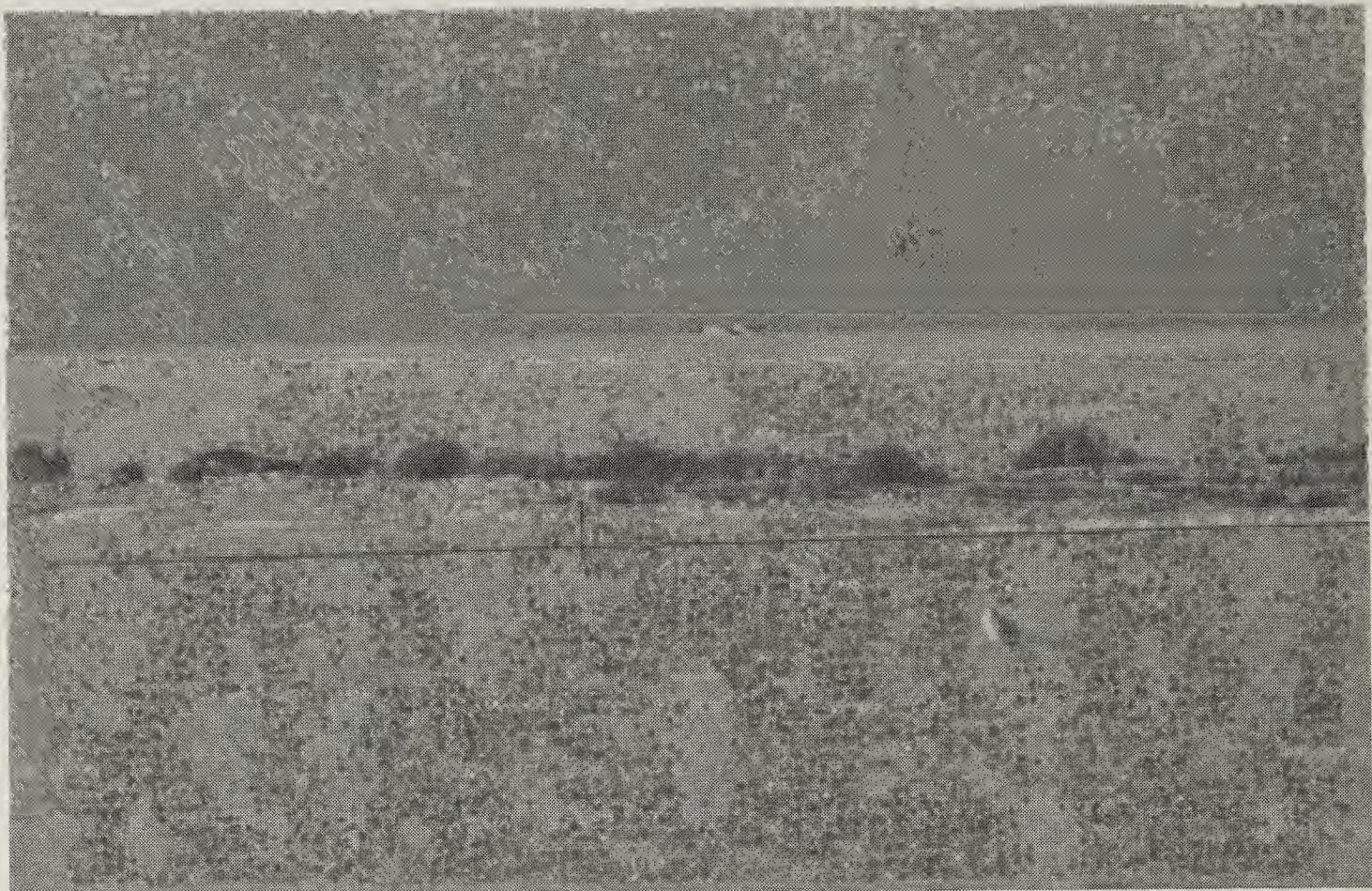


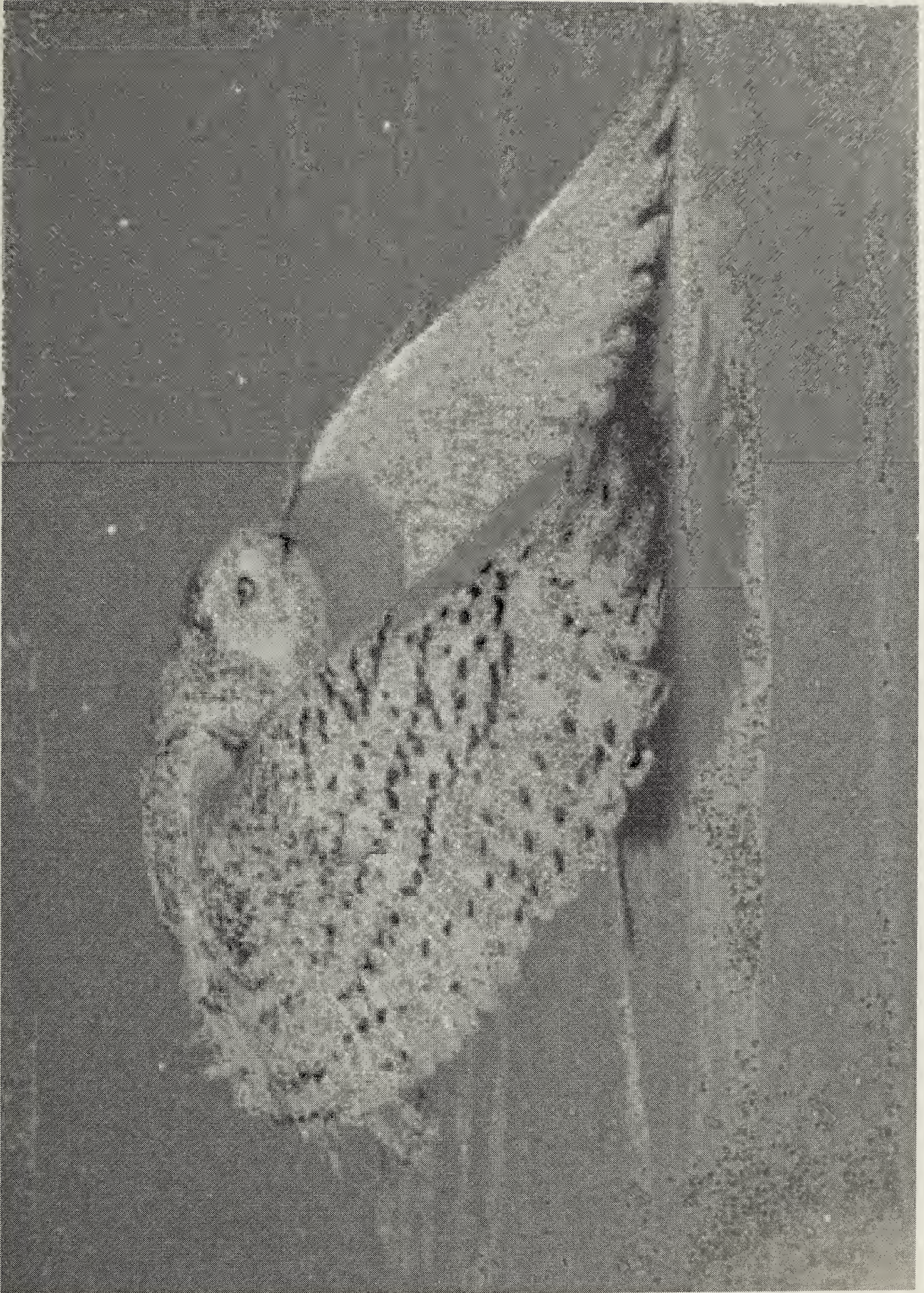
Photo 4 - The flat, open field and prairie landscape southwards from Saskatoon are very good winter habitats for snowy owls.

-Roar Solheim

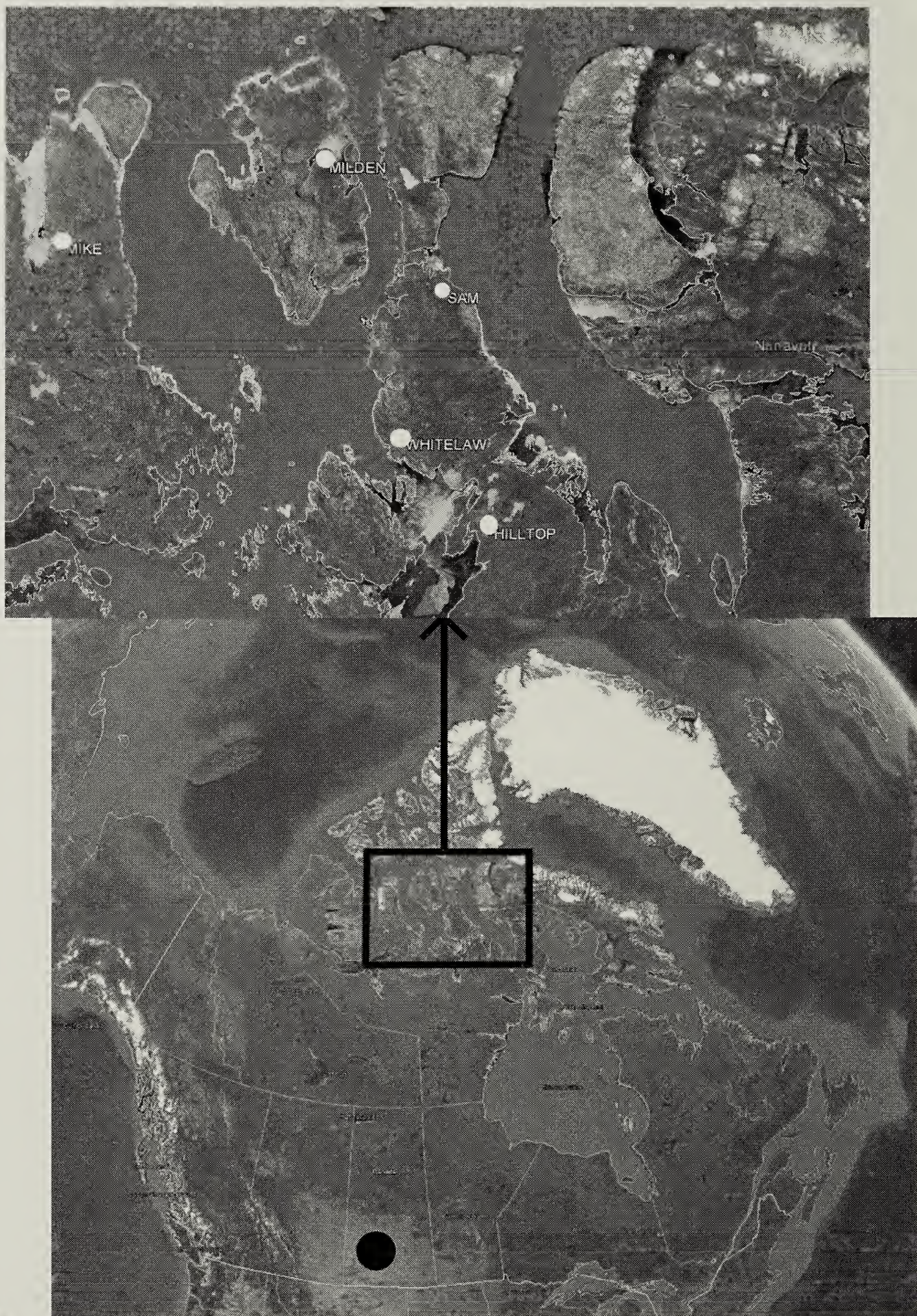


Photo 5 - Snowy owls are caught with bownets or balchatri traps. Here Dan is freeing a young snowy owl male from the net.

-Roar Solheim



*Photo 6 - An “old” female snowy owl takes off after being banded,
March 8, 2013. -Roar Solheim*



Top: Location of the five male Snowy Owls still transmitting signals (white spots with names) by the end of August 2014. Names we have used to easily identify the birds. Map from Google Earth, showing location of detailed map from Arctic Canada. Bottom, black spot: area where Snowy Owls are captured and marked during winter.



PHOTO ESSAYS

BALD-FACED HORNETS

HARVEY SCHMIDT, Creighton, SK. email: theo@sasktel.net

Back in August of 2011, I spent a couple days photographing bugs in the gardens at St Peter's Abbey in Muenster, SK. There I met a gardener who told me he observed some wasps that seemed to be feeding on the goo around the wounds that some of the sunflowers had developed. I didn't know what species they were, so I posted some photos I took to Bugguide.net, an online resource, for help with the identification. It turns out they were Bald-faced Hornets - *Dolichovespula maculata* - and the froth on which they appeared to be feeding, and in which other small insects had become stuck, was spittlebug spittle, which spittlebug nymphs surround themselves with as they feed. With all those hornets, I didn't manage to get close enough to the froth to get photos of the nymphs themselves.







Harvey Schmidt is a bug photographer who lives in Creighton, SK.
<http://buggingsaskatchewan.blogspot.ca/>
<http://spiders-n-stuff.blogspot.ca/>



UNUSUAL GREAT HORNED OWL NEST

DAN ZAZELENCHUK, email: danzaz@sasktel.net

Martin Gerard, Sig Jordheim and I, went out to visit a few Great Horned Owl nests. One of the nests was particularly interesting.

At dusk on March 31, 2014, I caught a Snowy Owl NE of Elrose which, to get out of the wind, I banded in a large farm yard. As I banded the Snowy Owl, I could hear a pair of Great Horned Owls calling to each other, somewhere in the yard. Around 1 May 2014, Martin, Marten Stoffel and Brent Terry stopped at that same yard and asked if they could look through the trees of the shelterbelts to see if there were owls nesting. "Oh, you mean the owls in the bin?"

Sometime in February/March, the inspection hatch on a 10,000 bu. hopper bin (fourth from the north in a row of ten bins and full to the hatch with canola) had blown open. And, for just the second time I can remember, we had owls nesting in the product in a steel bin. What impressed me was that the farmers were willing to leave the hatch open on a bin of canola worth \$100,000 just because there were owls in the bin.

Two weeks ago, when Martin

climbed the 35 feet to the hatch, he found four little owlets just a few feet from hatch, comfortably nestled in a depression in the canola. Two were large enough to band, but two were too small.

So, today (15 May 2014) we went back to see how the owls were doing. I climbed first and saw three little owls just inside the hatch. It was still lightly raining so I got some moisture on the lens of the camera. The fourth owlet was no longer there, but the remaining three looked healthy. In front of the left owlet there is a Lapland Longspur and off to the side were two headless Norway Rats. On top and half buried in the canola were many little regurgitated pellets as well as some big ones, such as the one in front of the middle owlet. The rats were a surprise, as we seldom see them in owl nests, but one of the employees said the local pest control officer had suspected rats in a nearby abandoned yard.

It will be interesting in another couple of weeks to see whether the owlets survive their first flights from the top of a 35' high bin to the ground.







Great horned owl

-Lowell Strauss

NOTES and LETTERS

CASSIN'S FINCH (*Haemorhous cassinii*)

ALAN R. SMITH, Box 154, Avonlea, SK, S0H 0C0,

Email: alanrandi@sasktel.net



- Alan R. Smith

This photo was taken of an unusual bird that was noticed and identified during the 2013 Christmas Bird Count. “Outstanding rarities include the CBCs second Cassin’s Finch at Saskatoon (the previous record was from Fort Walsh in 1983).”¹

1. Smith AR (2013) 72nd Annual Saskatchewan Christmas Bird Count – 2013. *Blue Jay* 72(1) pp2 -27.



GREAT BLACK-BACKED GULL (*Larus marinus*)

NICK SAUNDERS, Saskatoon, SK



-Nick Saunders

This photo was taken of an unusual bird that was noticed and identified during the 2013 Christmas Bird Count. “**New Species:** A Great Black-backed Gull at Gardiner Dam on 16 December is the first record on the CBC and only the ninth provincial record.”¹

1. Smith AR (2013) 72nd Annual Saskatchewan Christmas Bird Count – 2013. *Blue Jay* 72(1) pp2 -27.



CANADA GOOSE SWEEP OVER THE WEIR IN SASKATOON

JOHN PATTERSON¹ and SCOTT CORLEY²

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Any veteran watcher at the weir on the South Saskatchewan River in Saskatoon knows that on occasion a goose or duck will float fairly close to the weir before swimming or flying back upstream. They don't appear to be in any danger of being swept over, being clearly alert to the risk of drifting too close to the edge. However, on the morning of May 24, 2014 while participating in the May Bird Count, the unexpected happened and we saw an adult goose swept over the weir.

We were part of a team surveying the University of Saskatchewan campus including the eastside riverbank between University and Circle Drive Bridges. While the two of us were at the riverbank under the train bridge we observed a Canada goose behaving very strangely just above the weir toward the west side of the river. It floated backwards to the very edge of the weir and at the last instant as it started to accelerate over the edge it took flight and flew upstream a few meters and did it again. It was at much greater risk of going over the weir than any goose either of us have

previously observed. That it would put itself in such danger seemed inexplicable until we noticed that a second goose was directly below the first in the churn at the base of the weir. Only the neck and head of the second goose were visible from our vantage point.

How long the goose had been at the base of the weir, why it was there and how often the goose above the weir had floated to the brink were all unknown. While we watched, the goose upstream allowed itself to be swept backwards over the weir, this time making no effort to recover. Both birds immediately popped out downstream, seemingly no worse for their experience and swam to the cement pad on the western shore.

Pelicans can often be seen fishing at the base of the weir and one of us has seen a pelican carelessly drift too close and be driven under the water only to reappear and continue fishing, but only in exceptional circumstances would a goose be seen there. Over the years goslings have on occasion been observed going over the weir, sometimes accompanied by

an adult, and surviving¹. A goose and several goslings were seen going over the weir many years ago when the flow in the river was high as it is now². In that instance the adult was downstream of the goslings trying unsuccessfully to shepherd them back upstream but they were caught in the current. They became entangled in debris trapped below the weir and neither the adult nor the goslings survived. While the first adult had tried to block the downstream drift of the goslings the second adult remained upstream calling to them. Our best guess is that we saw the latter part of a similar drama - an early hatch of goslings

was swept over the weir with one parent. The parent was saved by its buoyancy and remained at the base of the weir. Either there were additional goslings that we didn't notice or the pair bond/parental instinct was sufficient to induce the second goose to follow the first over the weir. We didn't see any goslings that day but it is hard to imagine any other circumstance that accounts for the actions of the adult pair.

1. Personal communication from Michael Williams.
2. Personal communication from Craig Salisbury.



- John Patterson



GARTER SNAKE EATS LEECH

PHILIP S. TAYLOR Saskatoon, SK tel (306) 665-6371

11 June, 2014 in the Thickwood Hills, North of Redberry Lake. A young Red-sided Garter Snake (*Thamnophis sirtalis*) was capturing and eating a leech (species unknown). The snake was just over 30 cm in length; the leech about 8cm. Garter snakes are known to prey on leeches as they share habitats including the shallow water at pond and marsh edges.

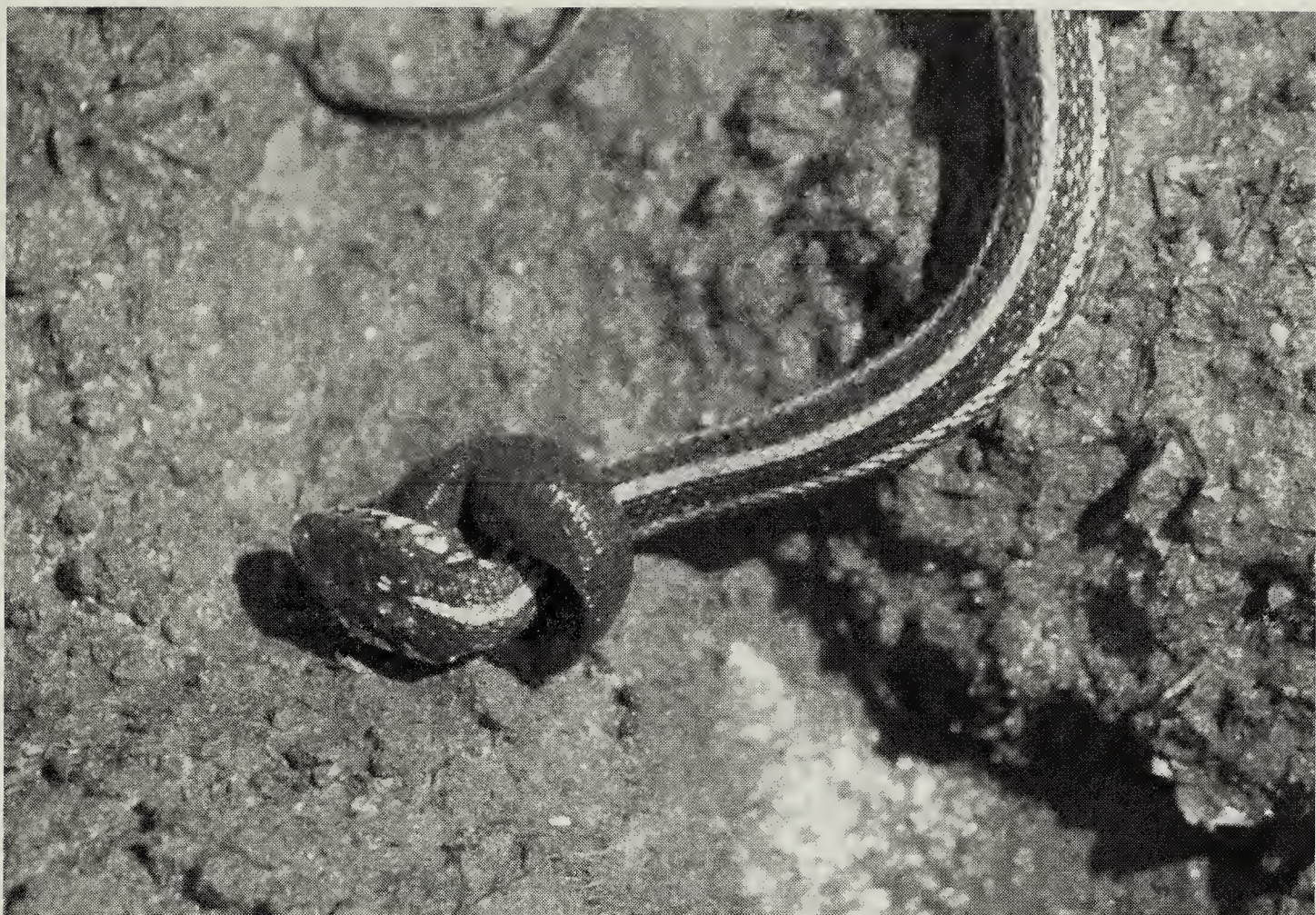
“Although garter snakes are not considered venomous, they have a gland above the upper jaw on either side (corresponding to the venom gland of vipers and other venomous snakes) that produces

potentially toxic secretions. In general, bites from garter snakes are harmless because these snakes lack fangs and thus cannot efficiently inject the gland's secretions. However, prolonged bites by western terrestrial and common garter snakes have caused swelling and localized bleeding in people, presumably because unusually large amounts of the secretions seeped into the victims. The "venom" of garter snakes may help them overcome prey, but this has not yet been studied.”

<http://www.onlinenevada.org/articles/garter-snakes>



- Philip S. Taylor



- Philip S. Taylor



- Philip S. Taylor

KINGBIRD OPTIMIZES FORAGING

JANET HECKER, Buena Vista, SK.

We live at the lake and have a couple of Western Kingbirds (*Tyrannus verticalis*) nesting in our yard. Our house eaves overhang our deck by four feet, which makes a wonderful place for spiders to spin their webs and catch insects. We have an ongoing battle with spider webs in our head space on our deck. On Tuesday July 8, 2014, I was sitting and reading just inside the picture window when I saw a Kingbird approach an insect-loaded spider web right up against the glass, hanging

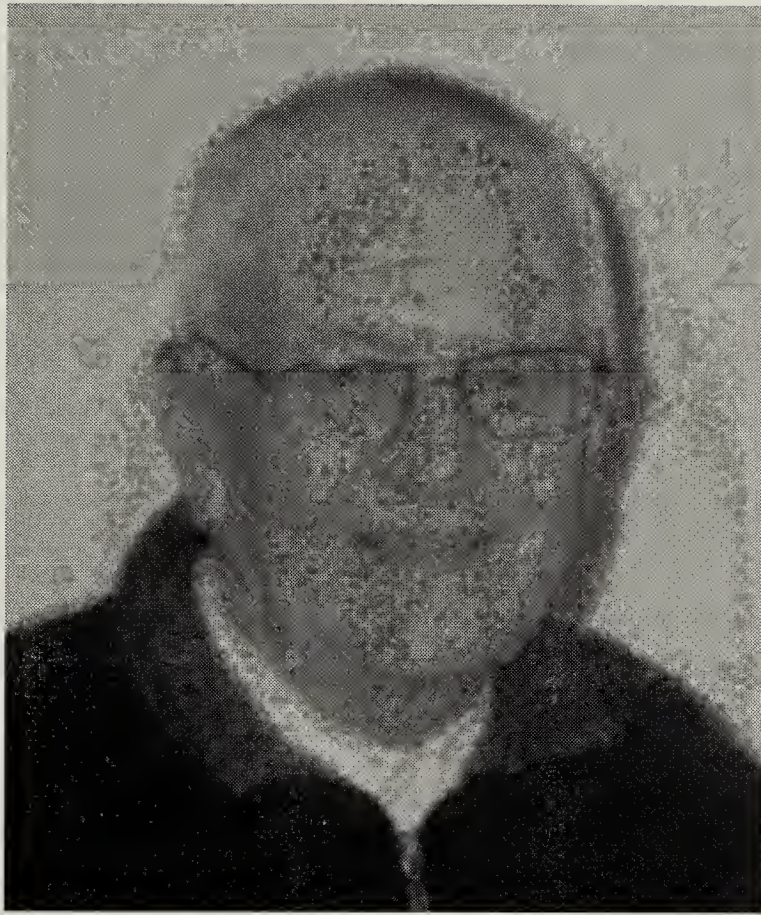
down from the soffit. He hovered almost like a hummingbird, and picked his favourite bug from the smorgasbord offered, and very quickly flew away, *taking the whole loaded web with him*. It was speedily done, and if the web survived the flight he and his family had a real feast that afternoon.



Western kingbird chicks

- Lowell Strauss

IN MEMORIAM: LORNE ROWELL, 1928 – 2014
C. STUART HOUSTON, 863 University Drive, Saskatoon SK S7N 0J8



Norman Lorne Rowell was born on a farm in the Chatsworth school district, northeast of Saltcoats, on 13 April 1928 to Nellie and Jim Rowell. To escape the stones on their rented land, the Rowell family in 1929 moved their belongings in three freight cars to Armley siding, then by team three miles west and north to a farm they had purchased along the Carrot River. The children attended nearby Manlius School. Armley boasted a municipal doctor and municipal nursing home, a store and a hotel, but no school. Lorne was active in the 4-H movement, the Saskatchewan Wheat Pool committee and the United Church. He attended the Voc Ag program at the School of Agriculture at

the University of Saskatchewan in 1947-48. In 1957 his parents retired and Lorne, the youngest son, purchased the farm.

In the winter of 1959/60 Lorne attended the Prairie Christian Training Centre (PCTC) at Fort Qu'Appelle, where he met Doreen McLeod, a fellow student whose parents lived nearby. Lorne was employed for the summer of 1960 as manager of the United Church Camp Tapawingo at Candle Lake. By chance they met again as Doreen volunteered as camp nurse for CGIT (Canadian Girls in Training) Camp Council, held at Tapawingo that July. That fall their PCTC class held a reunion where they again met. Following

this third meeting they began corresponding, and were married April 3, 1961 in Fort Qu'Appelle. They farmed at Armley and for several summers Lorne managed Tapawingo with Doreen volunteering as camp nurse for several of the weeks each of those summers. Lorne and Doreen then rented the farm and moved to Fort Qu'Appelle where Lorne became maintenance manager for the PCTC for 22 years. For eight of those years he and Doreen also managed the Valley Trails Motel.

Lorne and Doreen spent increasing time and energy studying nature. He came on to the board of the Saskatchewan Natural History Society (SNHS) in 1981 as president of the Fort Qu'Appelle Naturalists, became second and then first vice-president of the SNHS, 1983-1987 and served as provincial president, 1987-88. He supported George Ledingham in his long effort that finally culminated in the establishment of Grasslands National Park; in his president's report in 1988, Lorne acclaimed that announcement as the highlight of the society's year. He and Doreen and sometimes their son Shawn, participated in the Fort Qu'Appelle CBC for 26 years beginning in 1976. Lorne established and maintained many miles of bluebird houses,

and gave geological tours of his beloved Qu'Appelle Valley. He believed that earth is a gift of God and that we must aim to be good stewards.

The SNHS assigned Lorne to be their representative on the Ecological Reserves Consultation Group, which designated Saskatchewan's first-ever ecological reserve, the Assiniboine Slopes in 1986. Lorne followed Mary Skinner as the society's representative on the Qu'Appelle Valley Public Advisory Council and as president signed the extension of the SNHS lease for the Maurice Street Bird Sanctuary. When the government established the Round Table on the Environment and the Economy in 1989, Lorne was named to the forestry advisory group when such groups were formed in 1990.

Lorne and Doreen "wintered" in Saskatoon for several years before moving into Luther Tower in 2009. When he needed extra care, he was moved to Luther Special Care Home next door where Doreen visited him daily until her illness and death on October 31, 2013. Lorne's final ten weeks were spent in Sherbrooke Community Centre where he died 16 May 2014.



LICHEN SERIES - CHAMELEONS and LICHENS

BERNARD DE VRIES

What possible connection could there be between a Chameleon and a Lichen? Chameleons, those cute small tropical lizards, change their skin colour depending on the color of their background. And yes, some lichens are also capable of changing color. Here is where the resemblance ends, however, Chameleons belong to the reptile family, while the lichens belong to the fungi family.

Some lichens alter their hue when they become moist with rain or dew, and others change to red, yellow or purple as a result of chemical reactions between external applied drops of a reagent and internal chemical components. Such “Chameleon” lichens are: *Parmelia sulcata* (hammered shield lichen)^A turning from ashy gray to light green; *Peltigera leucopohlebia* (ruffled freckle pelt)^B changing from light brown to green, and; *Glypholecia scabra* (bright-eyed lichen [name coined by the author])^C which is bluish white when dry, but becomes pale reddish when wet.

So, let us leave the little lizards alone, and turn to the lichens. The first one would be hammered shield lichen (*Parmelia sulcata*) which is blue gray to ashy gray becoming green when wet, with a loosely attached elongated lobed body having entire or notched

margins and a network of raised ridges and depressions showing whitish dots of fungal hyphae when there are breaks in the upper surface. The lobe margins have round or elongated soralia where cracks develop. The lower side is black with numerous rhizines. Apothecia are rare, having flat brownish discs. This lichen often acts as a pioneer species in urban parks. Its substratum is coniferous or deciduous tree bark or branches, often with boreal oak moss (*Evernia mesomorpha*^D) and monk's-hood lichen (*Hypogymnia physodes*^E). Another colour change, this time to red, occurs when a drop of potassium hydroxide (KOH) is applied to the upper surface as an aid to identification. The specific name *sulcata* comes from the Latin *sulcus*, meaning grooves or furrows referring to the raised network of ridges and depressions.

The next one is ruffled freckle pelt (*Peltigera leucopohlebia*) which is gray to brownish when dry, becoming darker brown when exposed to more sunlight and turns grass-green when wet. The lobes are rather broad and loosely attached with upturned waved or ruffled margins. Lower surface is white with dark brown veins and with tufted, unbranched rhizines. Scattered warts on the upper surface contain blue

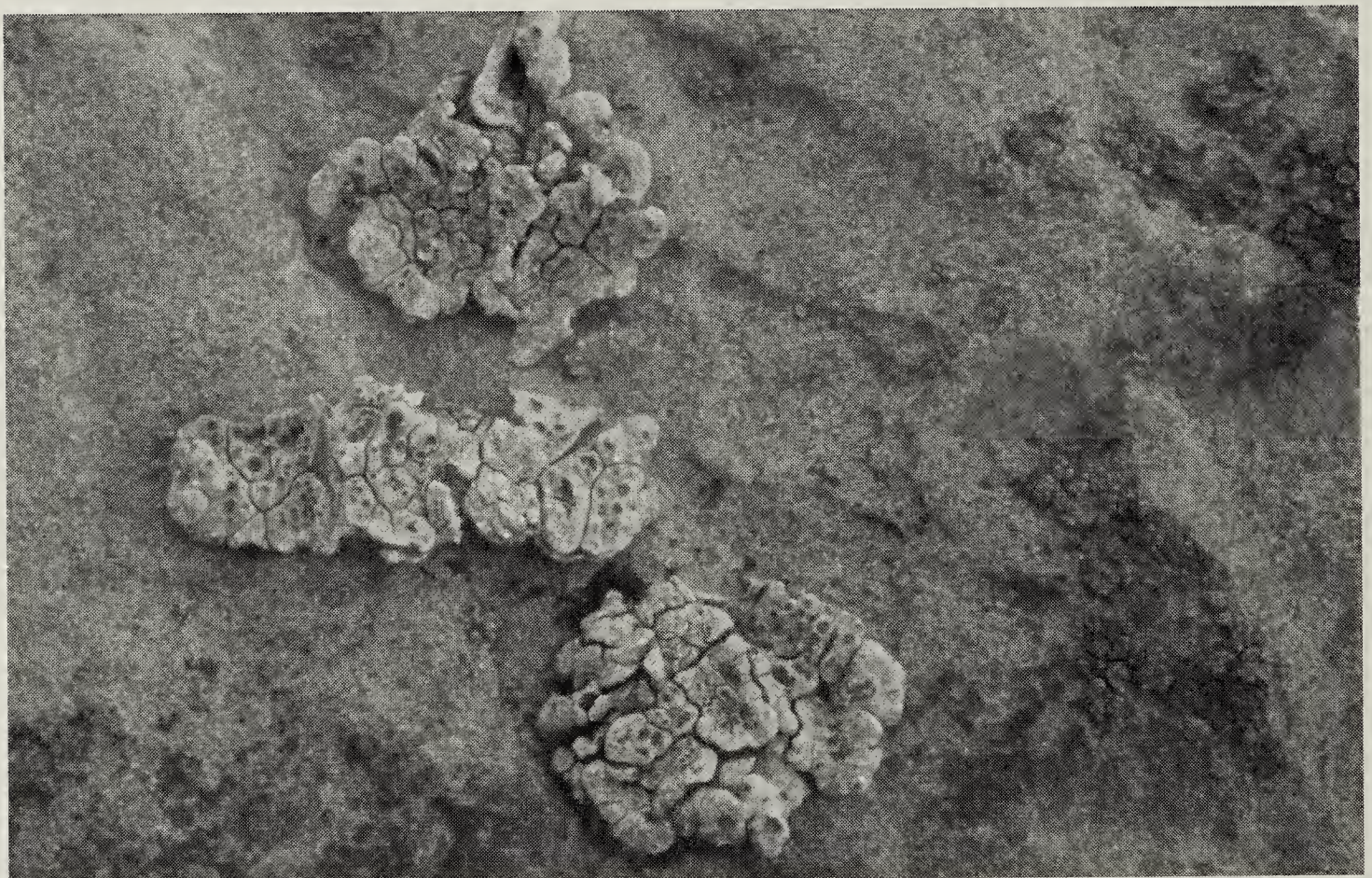
green algae (cyanobacteria) which are able to fix atmospheric nitrogen. The fruiting bodies have discontinuous patches of cortex on their upper surface.

A third lichen who changes colour when wet is bright-eyed lichen (*Glypholecia scabra*)^F, turning pale red from a chalky or bluish white. The thallus is foliose with a broad attachment, and broadly rounded lobes, ascending, concave or slightly convex, margins are rolled under. The central thallus appears more or less areolate but are attached to each other. The underside is off white. Fruiting bodies are numerous, immersed and at first single and small, but upon maturity become compounded in groups with a fuzzy covering between. Fruiting discs are bare, red-brown or dark brown. This lichen also turns red by spot

testing with Sodium hypochlorite (NaClO - liquid bleach). This lichen grows on limestone and occurs in Saskatchewan only in one small isolated location with another rare lichen *Rhizoplaca peltata* (brown rock posy) and due to this isolation and so far the only records for Saskatchewan, are vulnerable to extirpation. The area is presently under negotiation to be designated a preserve not only for the protection of these two lichens, but also of its unique landscape and other interesting vascular plants, lichens and mosses.

The next and last issue in the lichen series is: Lichens of our Grasslands.

For comments or suggestions on the series, please contact bdevries@accesscomm.ca



Glypholecia scabra - bright-eyed lichen



Parmelia sulcata - *hammered shield lichen*



Peltigera leucophlebia - *ruffled freckle pelt*

MYSTERY PHOTO

September 2014 Mystery Photo:

Avid photographer and Blue Jay Reader Randy McCullough sent in a real mystery for us. Something very interesting and relatively uncommon (in Saskatchewan) is hiding in his photo. What is this fuzzy thing?



Colour image inside back cover

-Randy McCullough

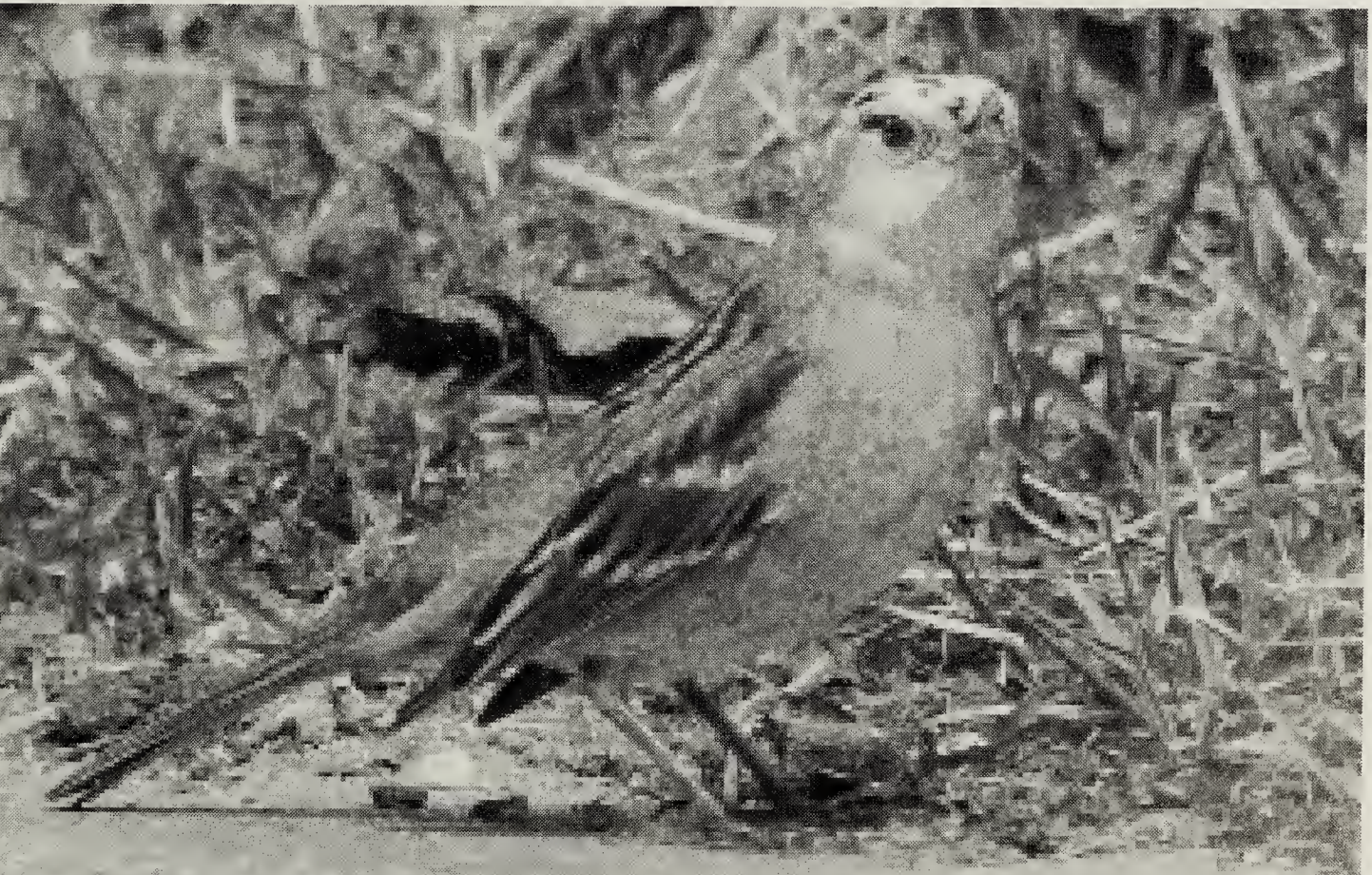
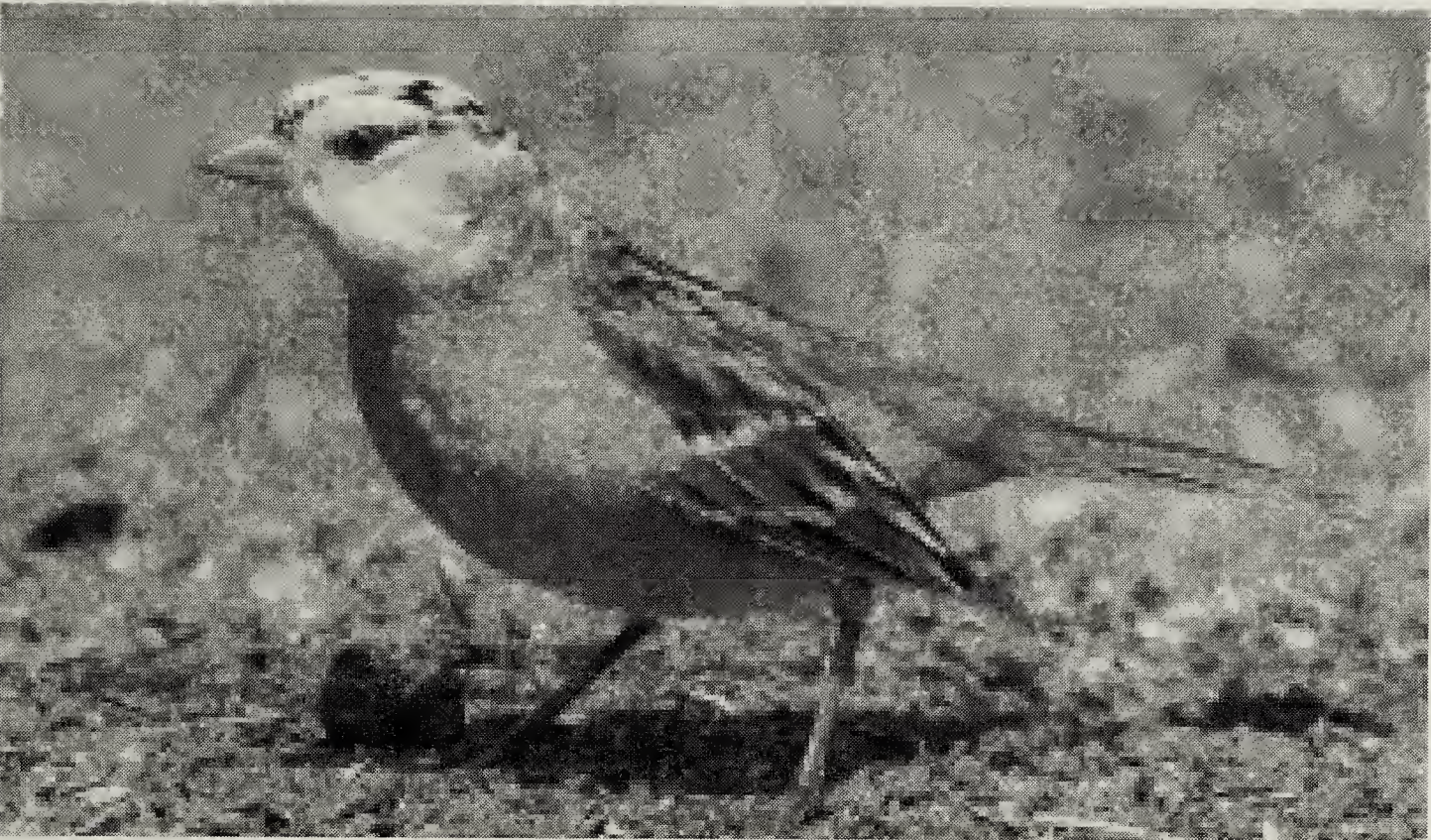
Please send your answers to the Blue Jay editors bluejay@naturesask.ca

Answer to June 2014 Mystery Photo:

Shelley Banks writes: earlier this spring [2014], we had what we think must be a White-crowned Sparrow [*Zonotrichia leucophrys*] in our backyard fairly often, and I managed to get a few good photographs of it. What makes this bird a little unusual is that it seems to have partial albinism on its head. The white was so striking that I started calling it a Ghost-crowned Sparrow.

We also asked an expert, Stuart Houston, to give us his take on this mystery. Dr. Houston writes:

“I agree with Shelley Banks [on the identity of this bird]. Mary and I have now handled 732 Gambel’s White-crowned Sparrows, but have not encountered this very white “ghost” head pattern.”



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EDITORIAL INFORMATION: Blue Jay welcomes all submissions, preferably by E-mail (although hand-written or typed manuscripts will be considered), polished or in need of some editorial assistance. All items for publication should be sent to the editors electronically by E-mail or on CD, or hard copies (in duplicate) may be sent by mail to the editors at the address above. Electronic submissions should only be submitted in Microsoft Word. Submission deadlines are 1 January (for the March issue), 1 April (for June), 1 July (for September), and 1 October (for December). For detailed information, see the "Guidelines for Authors" in Blue Jay Vol. 68 (2). Diether Peschken abstracts Blue Jay for Recent Ornithological Literature. Titles of Blue Jay articles are listed in BIOSIS.

Common and scientific (Latin) names are used for all species. Common bird names follow the Checklist of North American birds by the American Ornithologists' Union (7th edition, 1998); mammal names: Mammal Species of the World by Wilson & Reeder; butterfly names: The Butterflies of Canada by Layberry et al.; and names of reptiles and amphibians follow Scientific and Standard English Names of Amphibians and Reptiles of North America north of Mexico, with Comments Regarding Confidence in our understanding, Seventh Edition, SSAR Herpetological Circular No. 39. (Brian I Crother, ed.) (2012).

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Yellow-headed blackbird

- Anne Brigham



September mystery photo

- Randy McCulloch



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